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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/266,202	03/10/1999	HARIKLIA DRIS REITZ	2950.08US02	5465

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EXAMINER

LEE, KYUNG S

ART UNIT PAPER NUMBER

2832

DATE MAILED: 11/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/266,202

Applicant(s)

REITZ ET AL.

Examiner

Richard K. Lee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-9 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhargava in view of Jaskie.

Bhargava teaches that ZnO (group II-VI, semiconductor), ZnS and Y₂O₃ (col. 2, lines 4-32), are all suitable for quantum-contained phosphors. Bhargava teaches the claimed invention except for particles size range as claimed.

Jaskie teaches a device comprising phosphor particles having an average diameter of less than 100 nm (abstract) wherein the particle size is selected as desired. Jaskie further teaches that the specification of a desired particle range is within the skill of the art (col. 7, lines 34-40). Jaskie teaches the claimed invention except for the range of the phosphor particles.

It would have been obvious to specify a desired particle range since the specification of a desired particle range is recognized to be within the skill of the art.

Regarding claims 2-5 and 25-26, Jaskie teaches in col. 6, lines 46-49, the particle size of approximately 5nm. Such range meets the limitation of "a diameter greater than about three times the average diameter..."

3. Claims 1, 7-9 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iga et al. in view of Jaskie.

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Iga et al. teaches a varistor formed with powdered ZnO particles having the average particle size of 50 nm to 500 nm (col. 10, lines 3-35). Iga et al. teaches a stoichiometry of ZnO and ZnO₂. Further, the metal oxide of Iga et al. includes Bi₂ O₃. Iga et al. teaches the claimed invention except for the particle distribution range as claimed (claim 1).

Jaskie teaches a device comprising phosphor particles having an average diameter of less than 100 nm (abstract) wherein the particle size is selected as desired. Jaskie further teaches that the specification of a desired particle range is within the skill of the art (col. 7, lines 34-40). Jaskie teaches the claimed invention except for the range of the phosphor particles.

It would have been obvious to specify a desired particle range since the specification of a desired particle range is recognized to be within the skill of the art.

Jaskie teaches the in col. 6, lines 46-49, the particle size of approximately 5nm. Such range meets the limitation of "a diameter greater than about three times the average diameter..."

Response to Amendment

4. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

5. In view of the Request for Reconsideration filed on 3/28/02 and the Appeal Brief filed on 8/16/02, PROSECUTION IS HEREBY REOPENED. Response is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Applicant argues that Bhargava does not teach or suggest zinc oxide. The examiner disagrees. Bhargava teaches that ZnO (group II-VI, semiconductor), ZnS and Y₂O₃ (col. 2, lines 4-32), are all suitable for quantum-contained phosphors. The teaching of Bhargava provides substantial presumption of validity under 35 USC 282. Further, Kittle's (Introduction to Solid State Physics, submitted by Applicants) II-VI compound would include zinc sulfide, cadmium sulfide and zinc oxide.

Applicants argue that Jaskie does not describe a range of particle sizes. The examiner disagrees. Jaskie teaches a device comprising phosphor particles having an average diameter of less than 100 nm (abstract) wherein the particle size is selected as desired. Jaskie teaches in col. 6, lines 46-49, the particle size of approximately 5nm. Such range meets the limitation of "a diameter greater than about three times the average diameter..."

Applicants argue that Jaskie patent "had failed to establish an appropriate approach for the production" since he employs "wet filtration" in contrast to "Applicants' particle production approach ..." Pending claims, however, do not recite any production steps nor any specific methods.

Applicants alleges that the declaration by professor Bricker and Singh provides clear objective evidence that the wet filtration method, as disclosed by the Jaskie patent, does not enable the extremely fine separation needed for quantum contained phosphors, as desired by

Jaskie. The examiner respectfully disagrees. Professor Bricker and Singh do not present any experimental results, evidence of test-conducted methods evaluated or any factual evidence. The declarations made are mere arguments and opinions.

Applicants argue that size separation of nonoparticles by chromatography is at best speculative. The examiner disagrees. There is a substantial presumption of validity of US patents, such as by Jaskie. The experts, whose opinion, alleges that Jaskie is non-enabling, is of little probative value when compared to the teachings of Jaskie, as disclosed as a valid US patent.

Applicants argue that in five years since the issuance of the Jaskie patent, there is no public knowledge of successful application of the Jaskie approach and that this provides objective evidence against Jaskie. The examiner disagrees. Applicants fail to disclose data, public record or patent that have been searched, including at least the search terms or search strategy, applied against Jaskie.

Applicants argue, a product literature from Millipore Copr., provides evidence that filters are not effective in removing particles having a diameter less than a micro. The fact that the Applicants has found a vendor that provides a filter that is not suitable for nonparticle separation is non-persuasive. The purported evidence has no correlation to the fact the Applicants wishes to establish. A 32-ounce cola bottle does not provide evidence of the non-existence of 20 ounce cans. Further, Parker et al. (5,460,701), in col. 4, lines 54+, discloses the use of a mechanical filter for the collection of nanocrystals. Therefore, mechanical filters for nanocrystals are very much available.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard K. Lee whose telephone number is (703) 306-9060. The examiner can normally be reached on Mon. to Thurs. 5:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (703) 308-7619. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

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ELVIN ENAD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

11/4/02

Richard K. Lee
Examiner
Art Unit 2832

